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| **From:** | Coltrain, Katrina |
| **To:** | Kady, Thomas; Mcburney, Jonathan D |
| **Cc:** | Todd Downham; Turner, Philip; Forsythe, Barry; Teri Mcmillan (tmcmillan@eaest.com); Christina Radu (cradu@eaest.com); Luis Vega (lvega@eaest.com) |
| **Subject:** | Draft Wilcox Phase 1 report |
| **Date:** | Friday, April 29, 2016 3:17:00 PM |
| **Attachments:** | 1956 process-tank areas.pdf<br>DraftFigures_012016reducedsize 2.pdf<br>277_Temp_All_Sample_Locations_2015GPS_fX.pdf<br>background summary for ERT trip report 4-29-16.docx<br>QAPP project objectives and questions summarized 4-29-16.docx |

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Tom/Jon, please see my comments and questions on the draft report. It looks to be quite a list, but I think most of these are easy to address. Just give me a call if we need to discuss.
thanks

1. Please include maps that show the entire site and identify the areas of interest and areas that were investigated. See attached 1956 process-tank.pdf and 277 Temp all sample locations.pdf.
2. Please include an acronym definition section and also review text to ensure all acronyms are defined at the first use.
3. Page 1, Background: It is stated that 'tank bottoms' are a source of contamination. To my knowledge we have no direct information to classify or define these as such. For consistency with previous reports please replace the background section with the text provided in the Background summary for ERT trip report 4-29-16.docx document provided.
4. Page 1, Purpose:
    a. I believe the correct term is x-ray fluorescence rather than x-ray fluoroscopy.
    b. Please include a short list of the project objectives as listed in the QAPP. These objectives should then be reiterated in the Results/General Observation sections to show how we were able to meet the objective or whether it remains a data gap.
    c. As was done with the LIF paragraph, include a short sentence or two about how the use of geophysics, XRF, analytical data, and CPT were selected to answer the site questions and meet the site objectives.
    d. The attached information from the QAPP should help with b and c.
5. Page 2, Sampling Strategy: Please include a discussion of the following.
    a. Strategy for employing geophysics, PID, XRF metals, and the CPT.
    a. Include the maps of the bedrock and/or clay layer and overburden.
6. Page 2, Figure 1: Please replace this figure with 1956 process-tank areas.pdf (attached) showing all areas of the site. A subsequent figure as provided in the report (Figure 1) can be used to show areas investigated during Phase 1. (reference comment number 1 above).
7. Page 4, Figure 5: please identify the dotted line.
8. Page 5, Wilcox Refinery: *Note for Report*: Reference is made to the 1961 Sanborn; however, when the copyright 1961 sanborn is compared to aerial photographs, it represents the conditions of the refinery that existed around 1941. In addition, one would expect that if the Sanborn was 1961, then site tanks along the southern boundary and the additional 2 ponds near Tank 11 would be included. Interesting inconsistency.
9. Page 5, Site Activities: Please include a discussion of the following.
    a. The geophysics work and the test pitting done. This section needs to reference the figures of the overburden and topography. Refer to attached file draftfigures 012016.pdf. In addition, a description of the test pits completed during the September event should be included and would be more useful in each

respective section.

b. The CPT work that was done. Also, include the a statement explaining why the CPT was removed in favor of the LIF.

10. Page 6, Truck and Track Mounted ROST:
    a. Please clarify in the text that the actual sample locations are presented and discussed for each investigation area in their respective sections. Refer the reader to Figure 2 showing the actual sample locations (277 Temp all sample locations.pdf) vs the planned locations presented in figures 6 and 8. This may be more appropriate for the Results section on page 8.
11. Page 8, Area Evaluations:
    a. please revise the names to areas of interest vs areas of concern. The latter has specific meaning under RCRA. Please review text for other places that this term may have been used.
    b. Bullet 2: this should also include the geophysics results and overburden depth.
12. Page 9, General Observations:
    a. Bullet 1: please include a sentence or two for the following--depth of overburden? Depth to refusal layer? Is the refusal layer bedrock or clay? I the refusal layer continuous? Was water encountered? Thickness of the refusal layer?
    b. Bullet 3: what of the ethyl blending area?
    c. It should be noted that for some locations soil results are high with a %fluorescence less than that seen at other soil sample locations where the data results are much lower and the %fluorescence much higher (e.g., TF-12-05 vs WIL-65). In addition, samples with similar waveforms and similar fluorescence may have different data results (e.g., Wil-25 vs WIL-29). This may result in data interpretation complexities in the ROST/analytical correlation effort.
    d. Please provide a bullet on the presence or absence of water encountered during field activities.
13. Page 10, Ground Water Results
    a. It is stated that ground water was not encountered; however, further discussion stated that ground water impacts were probable and ground water samples were collected. Please clarify and explain further. What criteria was used to select the temporary ‘well’ locations?
    b. This report identify the water sampled as ground water; however, further investigation is needed to make this determination.
    c. Please provide a summary of the temporary ‘well’ depth; relative time needed for water to accumulate for a sample to be collected; the sample characteristics (turbidity, source water, oily, etc), any other observations of the water.
14. Page 11, Data Gaps: Please include the following--
    a. Analytical data to define ROST information is needed to delineate areas of investigation and identify contaminants of potential concern.
    b. Metals analytical data are needed to identify contaminants of potential concern.
    c. A subsurface investigation is needed to confirm the presence or absence of water, the classification of the water, and identification of any seep to the creek.
    d. Confirmation of site-wide stratigraphy including the presence of a continuous refusal layer across the site in needed as well as a full description of the lithology, depth and thickness.
    e. Delineation of the LNAPL is needed.
    f. Waste characterization sampling is needed for the different waste sources.
    g. Investigation of the Potential tank locations east of the east tributary, in addition

to the loading dock area and North tank farm.

h. Horizontal and vertical delineation of the Sweetening/Additives area is needed.

15. For all subsequent Sections, please include the following information.
    a. XRF and metals data for each core collected.
    b. Data tables (and all others): a legend is needed. See Sheet 5, Tanks 34, 35, 36, and 37 for legend.
    c. Please identify the scale for the waveform inserts. Assume this to be intensity (vertical) vs time (horizontal).
16. Section 2, Tank 11:
    a. It is stated that the ROST indicates the contamination is limited to the within the berm area. This bullet is not consistent with the following 2 sections which are more descriptive and explanatory. Please remove this bullet.
    b. I recall a discussion on this area related to the presence of tar-like waste that was present at the surface and would also become present in the heat of the summer through migration to the surface. Did you observe this at the surface? ODEQ may be able to clarify if I am remembering correctly.
17. Section 4, Tank 12:
    a. It is stated that no further delineation is necessary; however, delineation to the north and east towards the smaller tank that can be seen in the 1956 aerial is needed. In addition, historical information indicates that the berm in this area was removed and materials allowed to discharge through the drainage and into Sand Creek.
18. Section 7, Wilcox Upper Process Area:
    a. What are the metals results for the ethyl blending area?
19. Section 8, Wilcox Product Storage:
    a. Delineation using TPH will require review relative to risk. For example, the screening numbers for benzene and benzo(a)pyrene are lower than TPH screening values. If the full priority pollutant list is needed for risk assessment, then the components that would be part of the TPH analysis are sampled. In addition, my recollection is that TPH analyses are not supported by the regional lab. Further discussion with the risk assessor will be needed.
    b. It should be noted that during the residential sampling, the following was observed in the area around the office building/resident (4 100ftx100ft grids about the building).

i. Strong odors and staining within the upper 1ft.
ii. PAHs were detected above the residential soil screening values down to 2ft bgs.
iii. Benzene was detected above the residential soil screening level at 2ft bgs in one grid.

20. Section 10, Tank 5:
    a. The property owner confirmed that both ponds that are present on the property were dug by him in early 2000's.
    b. It should be noted that during the residential sampling an oil/sludge was visually observed in the area of TF-05-07 at 1ft bgs and observed in the area of TF-05-08 at 1.5 ft bgs.
21. Section 11, Tank 6 and Section 13, Tank 8:
    a. Analytical data are needed to confirm. As noted in a few locations, the signatures can be similar with significantly different results. In addition, it has been noted in the report in several locations, ROST data is not always confirmed through visual observations or PID readings.
22. Section 15, Tank 10:
    a. Test pits were dug in the tank farm area back in September 2015. Information on

the stratigraphy can be pulled from those logs.

23. Section 16, Pond 3:
    a. Please include a description of the borings. The figure shows 9 borings near Pond 3.
    b. Analytical data are needed to confirm. Historical data indicate the presence of high lead. Do the XRF data from the 9 borings support historical results?
24. Section 17, Pond 4:
    a. Please include a description of the test pits dug in this area during September 2015.
    b. It should be noted that during a removal action two samples were collected from the surface within the Pond boundary. PAHs were detected above the residential soil screening level.
25. Section 18, Tank 13:
    a. Please revise the 1956 figure caption. The caption of the tank is incorrect and references the pond.
26. Section 19, Lorraine Refinery
    a. It is stated that most of the tanks were located on the church property. This needs to be clarified because the North Tank Farm associated with Lorraine is located north of the process area across refinery road.
    b. Per an exchange of information through email, it was explained that LOR-09, -08, and 10 represented the LNAPL. Please include this information in Section 19. In addition, it is not clear from the boring description for LOR-09 whether LNAPL or any product staining was observed.
    c. Please include a 3D image of Lorraine as was done with Wilcox.
27. Appendix I: This is titled 'Understanding ROST'. Please include a cover page with the source identified as well as a date. References throughout the appendix refer to sediment and 'this project'. Since sediments were not part of the Wilcox investigation, this does not appear to be a document written for Wilcox but rather a document that has been copied from another source.
28. Appendix K-Geophysics:
    a. The version of the report provided on October 30, 2015, should be used. The version included in this appendix is a prior draft. In addition, comments were provided on the 10-30-2015 draft report through email dated 11/23/15.
    b. Please finalize the report and include as Appendix K. Also, reference comments 5 and 9 related to the inclusion of text that summarizes the geophysics work.
29. Please include the following information in the report.
    a. Appendix for the XRF data.
    b. Appendix for the CPT data.
    c. 4DIM folders for geophysics and XRF.
    d. Site photographs.

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